MEDEX

ID-LEVEL HEALTH WORKER
REFERENCE MANUALS

COMMUNITY HEALTH

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35 VOLUMES

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World Health Forum, Vol. 4, 1983

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After completion of extensive field trials in Micronesia and in primary health care programs in Lesotho, Guyana, Pakistan, and Thailand, the methods and materials of the MEDEX technology have been published as The MEDEX Primary Health Care Series. The Series provides a systematic, practical, adaptable format for management and training in new or existing primary health care programs at all levels.

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30 Health Center Operations

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Clean Water and Clean Community
Prevention and Care of Diarrhea

33 Healthy Pregnancy
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Caring for Your Child
Caring for Your Sick Child
Clean Home and Clean Community
Illustrations for Training Community Health Workers

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COMMUNITY HEALTH

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The MEDEX Primary Health Care Series

COMMUNITY HEALTH

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SECTION 5

Introduction

The Community Health manual provides practical information to help you and community members and leaders carry out community health activities. It is divided into five sections, each of which deals with a different area of community health and community work. Each section includes aids or tools that will help you with your work in the community. These aids and tools include charts, checklists, schedules, guides, step-by-step instructions, and simple lists. They are designed to supplement what you have already learned about the process of planning and carrying out community health activities.

In your work in the community you will plan and carry out two types of community health activities. You will carry out some activities on your own or with the help of one or two other people. You will plan and carry out other activities with the help of the community and specially skilled resource people. This manual includes information about both kinds of activities. The information outlines what these activities involve in terms of materials, equipment, and skills. For example, suppose one possible community health activity is to protect the village spring. You have not been trained to protect springs. You will need the help of a rural sanitarian or health inspector. But you can read the information about protecting springs in this manual. Then you will be able to take part in the activity. You can help educate community members, help gather materials and supplies, and help keep the activity going.

The approaches to community health work presented in this manual are recommended approaches. That is, they have been successful in several countries around the world. However, your own experience and the particular situation in your community may require a different approach. Remember that the solutions to community health problems must come from the community itself. Use this manual only as a guide. Add or change information as necessary to reflect your unique situation. Consider keeping the Community Health manual in a looseleaf notebook to make additions and changes easier.

Be sure to share the information in this manual with other members of the health team and with the members of the communities where you work. Keep the information up-to-date. Make the Community Health manual a useful tool in helping communities stay healthy.

SECTION 1

Resources and Information for Planning and Carrying Out Community Health Activities

1.1 MAPPING

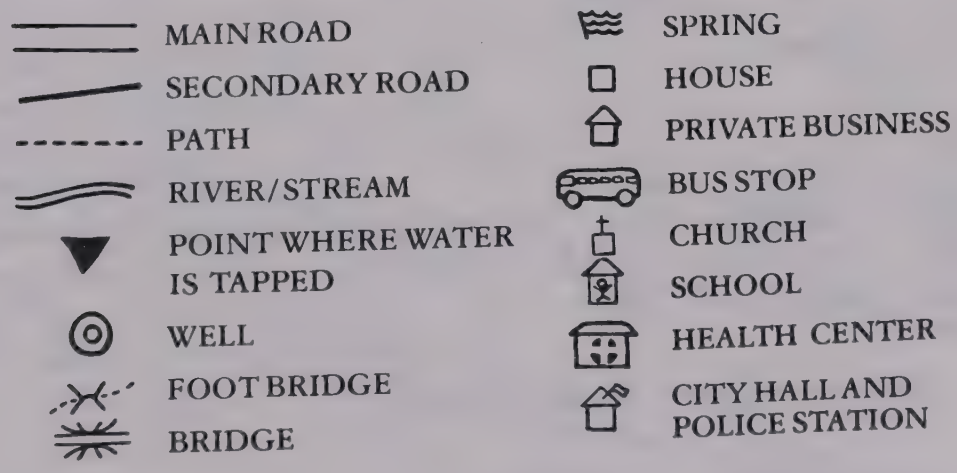
To plan and carry out community health activities, you must identify community health needs. A map of a community is one important tool for identifying a community's health needs. A map shows all the houses, churches, schools, rivers, and other important features of a community in a graphic way. A map can help you position yourself easily in the community and know at a glance what is being done where.

Understanding a Map

Using a map correctly can help you plan and carry out community health activities.

There are five principles for understanding a map.

a. Each symbol on a map has a meaning. Health and development workers use some common symbols:



b. A map notes where each main road or path goes. Most commonly, an arrow points to the name of the village, town, or city that the road or path leads to. Most major roads or paths have a commonly used name, such as the "road to Mafeteng" or the "road to Maseru." But sometimes different people use different names. A map should include the name used by most people in the community being mapped.

c. The distances on a map relate to the distances in the community. For example, house number 19 on the road to Roma and house

number 18 on the road to Mafeteng are very far apart in the village. The map shows this.

d. Each house on a map is numbered.

e. A map includes information at the top, such as:

The name of the community or area mapped
The district and province in which the community or area is located
The date the map was drawn
The date the map was last reviewed and updated
The name of the person who drew the map

This information helps you correctly understand and use the map. It also helps when you update the map.

Using a Map

Once you have been given or have made a map, you must learn how to use the map. That means being able to follow a map of a particular community or area and being able to identify the structures, such as buildings, and features, such as rivers and mountains, that are shown as symbols on the map. Follow these steps to use a map.

a. Be sure the map follows the five principles for understanding a map.

b. Choose a point in the community from which to start following the map. Choose a point that is easy to identify, such as a church or a school on a main road or path. Locate the point on the map.

c. Stand at the chosen point in the community. Position the map to point in the direction you are moving. For example, suppose you want to travel toward Maseru. Turn your map so that the "road to Maseru" points down the road where you are standing. Follow the road. Note that the position of the houses and other structures or landmarks on your left and right match the symbols on the map.

d. Turn the map each time you turn. Each time you turn in a particular direction, turn the map in the opposite direction. For example, suppose you are walking toward the lake. You come to the intersection where the bus stop and the private business are located. You turn left and are now facing in the direction of the road that goes to Mafeteng. If you did not turn the map, the road on the map going to Mafeteng would now be pointing in the direction of the road going to Roma. To correct the position of the map, turn it ninety degrees to the right.

Drawing a Map

Many rural communities have never been mapped. Drawing a map of a community will help you in planning community health activities. Drawing a map may also gain you the appreciation of the community members. Follow these steps to draw a map.

a. Use a map form or a blank sheet of paper. Leave space at the top of the paper to record information about the map.

b. Get to know the area in and around the community well before you begin to draw your map. Walk around the community that you are going to map. Follow the boundaries of the community.

c. Plot the four farthest points in the community to be mapped: top, bottom, left, and right.

d. Draw a main road or path entering the community. Indicate where the road goes when it leaves the community. Then add all the other roads and paths, rivers, streams, lakes, ponds, bridges, houses, public buildings, churches, schools, and health center using the

correct symbols. Add a key at the bottom of the map to explain the symbols. Be as accurate as possible, especially if others will use your map.

e. Number all the houses in the community. Number the first house at the main entrance to the community as number 1. Number all the other houses in order.

f. Review your completed map. Make sure that you have included all of the important features of the community. Walk around the community with the completed map, making any necessary corrections as you go. Ask someone who knows how to read a map to follow your map through the community. Correct any problems that this person finds.

g. Record the identifying information at the top of the map.

1.2 SOURCES OF INFORMATION IN THE COMMUNITY

To plan and carry out community health activities, you must get to know the community. Getting to know a community is a process that involves many people. The more you talk to people from different parts of the community and to people who have worked in the community, the more complete your picture of the community will be. Use the following forms as guides when you talk to people in the communities where you work. Obtain information about each of the topics on the form. Ask the questions suggested here, or make up questions of your own about each of the topics listed.

Talking to a Community Leader

Name _____

Position _____

Community _____

Date _____

1. Comment on the health needs of these members of your community:

   Women _____

   _____

   Pregnant women _____

   _____

   Infants _____

   _____

   Children _____

   _____

   Men _____

   _____

   Elderly people _____

   _____

2. What health activities have been carried out in this community in the past?

   Were the health activities successful?

   How did people in the community feel about the health activities?

3. Do you have any comments about the economy or agriculture in your community?

4. Do you have any other comments?

5. Who else would you suggest that I talk to?

Talking to a Person in the Home

Name _____

Community _____

Date _____

1. List the members of your household who are aged five and older.

NAME	AGE	RELATIONSHIP TO HEAD OF HOUSEHOLD	OCCUPATION

2. List the children in your household under age five. Fill in the information for each child.

NAME	AGE	ARM MEASURE-MENT		IMMUNIZATIONS			PERSON WHO CARES FOR THE CHILD DURING THE DAY
			BCG	MEASLES	POLIO	DPT	

3. Where does the water for your household come from?

Rain or snow ____ River or canal ____ Other ____

Standpipe ____ Pond or lake ____

Can you get enough water?

Does the water seem clean?

4. How do members of your household dispose of garbage and trash?

   How do members of your household dispose of human wastes?

5. Is your household bothered by:

Mosquitoes	____	Cockroaches	____	Other pests	____
Flies	____	Rats or mice	____		____

6. Where do you go for advice when a person in your household has a health problem?

		COMMENTS
Mother	____	_____
Auntie	____	_____
Sister	____	_____
Friend	____	_____
Midwife	____	_____
Nurse	____	_____
Mid-level health worker	____	_____
Self	____	_____
Other	____	_____

   Who delivered the children in your household?

   Were the children in your household born at home, in the health center, or in the hospital?

7. Have any members of your household visited the health center for any of these reasons?

	YES	NO	DO NOT KNOW	COMMENTS
Prenatal clinic				
Well baby clinic				
Health talk				
Sick visit				
Other				

8. How long does it take you to travel to the health center?

How do you travel to the health center?

9. Has a health worker visited your home in the last six months for any of these reasons?

	YES	NO	COMMENTS
Follow-up of illness			
Emergency			
Talk about children			
Talk about water or waste disposal			
Other			

10. Has anyone in your household had any of these problems in the past year?

Diarrhea ____ Yellow eyes ____ Skin rash ____ Other ____

Fever ____ Cold ____ Worms ____

How did you care for household members with any of these health problems?

11. How do you care for a child with vomiting and diarrhea? What would you give him:

To eat _____

To drink _____

12. How much do you spend on food each week?

13. Describe what members of your household eat.

Describe what pregnant women in your household eat.

Describe what infants eat.

Describe what children aged one to five eat.

Do mothers in your household breast-feed their babies?

How long do mothers breast-feed their babies?

14. Are any women in your household pregnant now?

Have women in your household suffered from any of these problems during pregnancy?

Swelling ____ Fits ____

Tired feeling ____ Bleeding ____ Premature births ____

Other medical problems _____

_____

_____

15. Would you like to have more children? How many?

Do you use child spacing methods?

What are your feelings about child spacing?

Talking to a School Worker

Name _____

Position _____

School _____

Community _____

Date _____

1. Describe your thoughts about the health of this community.

2. Comment on common diseases in the community.

3. Comment on nutrition in the community.

4. Describe health activities that have been conducted in the schools.

   What effect did these health activities have?

   How would you follow-up on these health activities?

5. Describe how parents are involved in the education of their children.

6. Do you know of any parent groups that would be interested in health activities?

7. Who else would you suggest that I talk with?

Talking to Another Official Health Worker

Name _____

Position _____

Community _____

Date _____

1. What are your current responsibilities?

2. How long have you worked in this community?

3. What health activities do you carry out?

   Which groups of people are involved in your health activities?

   What results have you seen from the health activities?

4. What do you see as the major health needs of people in the community?

5. Do common diseases vary with the seasons? Explain your answer.

6. Who else would you suggest that I talk with?

Talking to a Development Worker

Name _____

Position _____

Community _____

Date _____

1. What activities do you carry out in this community?

   Which groups of people do you work with?

   What results have you seen from the activities?

2. What can you tell me about working with this community?

3. What do you see as the major health needs of people in the community?

4. What future activities have you planned that will affect the health of this community?

5. Do you have any other comments or suggestions?

1.3 RESOURCE PEOPLE FOR COMMUNITY HEALTH ACTIVITIES

Helping a community stay healthy is not a job that you can do alone. It requires help from community members and leaders. It sometimes requires help from people outside the community as well. While you are getting to know a community you will learn about many skilled resource people who can help you carry out community health activities. The following chart will help you identify possible resource people during your planning of community health activities. The chart is divided into two sections: community activities and potential resource people. The resource people are categorized according to whether they can be found at the community level, the health center level, or the district level.

Activities \ Potential Resource People	COMMUNITY LEVEL											HEALTH CENTER LEVEL				DISTRICT LEVEL										
	COMMUNITY LEADERS	FORMAL ORGANIZATIONS	INFORMAL GROUPS	COMMUNITY COMMITTEES	RELIGIOUS LEADERS	TRADITIONAL HEALERS	SCHOOL TEACHERS	COMMUNITY HEALTH WORKERS	TRADITIONAL BIRTH ATTENDANTS	AGRICULTURAL EXTENSION WORKERS	OTHER COMMUNITY / FAMILY MEMBERS	AUXILIARY NURSES	MIDWIVES			PUBLIC HEALTH NURSES	NURSE MIDWIVES	RURAL SANITARIANS	RURAL HEALTH INSPECTORS	IMMUNIZATION WORKERS	MALARIA CONTROL WORKERS	FAMILY PLANNING WORKERS	RURAL DEVELOPMENT WORKERS		
Getting to know the community	●	●	●	●	●	●	●	●	●	●	●	●	●			●	●	●	●	●	●	●	●		
Screening pregnant women	●					●		●	●		●	●	●			●	●					●			
Screening children	●					●	●	●	●		●	●				●	●			●		●			
Immunizing children	●			●			●	●			●	●				●	●			●					
Carrying out school health activities							●	●			●	●				●									
Identifying environmental health problems	●							●			●					●		●	●		●		●		
Digging and protecting wells				●				●			●							●	●				●		
Making compost pits				●				●		●	●							●	●				●		
Protecting springs				●				●			●							●	●				●		
Building and taking care of pit latrines				●				●			●							●	●				●		
Controlling mosquitoes, flies, and rodents				●				●			●							●	●				●		
Controlling disease outbreaks	●	●	●	●	●	●	●	●	●	●	●	●	●			●	●	●	●	●	●	●	●		
Gardening				●				●		●	●												●		
Training and supporting community health workers	●			●						●		●	●			●	●	●	●		●	●	●		
Educating community members about health	●	●	●	●	●		●	●			●					●	●	●					●		
Identifying common diseases in the community	●					●	●	●			●					●	●	●	●				●		
Carrying out other community health activities																									

● Main resource people who can help you

SECTION 2

The Health and Care of Mothers and Children

2.1 BASIC MESSAGES FOR THE CARE OF INFANTS AND CHILDREN

Share these health messages with people in the communities where you work.

A pregnant woman should eat extra body-building foods and foods that are rich in iron. She needs plenty of food to nourish herself and the baby growing inside her.

A pregnant woman should see a health worker right away if she is ill.

Mothers should breast-feed their children for at least two years.

A breast-feeding mother should eat extra body-building foods. Then her body can produce enough breast milk so her baby stays healthy.

Mothers should continue to breast-feed even when they or their children are ill.

Start adding soft, mixed foods to a child's diet when he is four months old.

Feed children when they are hungry, at least four to six times a day.

Continue to feed a sick child. Sick children need food.

Give a sick child more water, especially when he has diarrhea or is vomiting.

Take a sick child to see a health worker early.

Take children to the health center regularly for special injections and medicines that protect them from many diseases.

Cover food and water to keep flies away. Flies spread disease.

Wash your hands after going to the toilet.

Wash your hands before preparing food.

Wash your hands and your children's hands before eating.

Give children clean water to drink.

Space children at least two or three years apart. Then mothers can regain their full strength and give good care to their children.

2.2 USING A GROWTH CHART

A growth chart will help you assess a child's rate of growth for the first five years of his life. A growth chart is on the back of a child's Under-Five Card. Follow these steps to use a growth chart.

Prepare and Fill in the Chart

a. Show the mother the Under-Five Card. Explain that she will keep this card as a record of her child's health.

b. Ask the mother for the information needed to fill in the Under-Five Card.

c. Turn to the growth chart on the back of the card. Fill in the child's name, birth weight, and reasons for any special care at the top of the chart. Reasons for special care include high risk conditions or problems. See Unit 6 in the Identifying the Preventive Health Needs of the Community module.

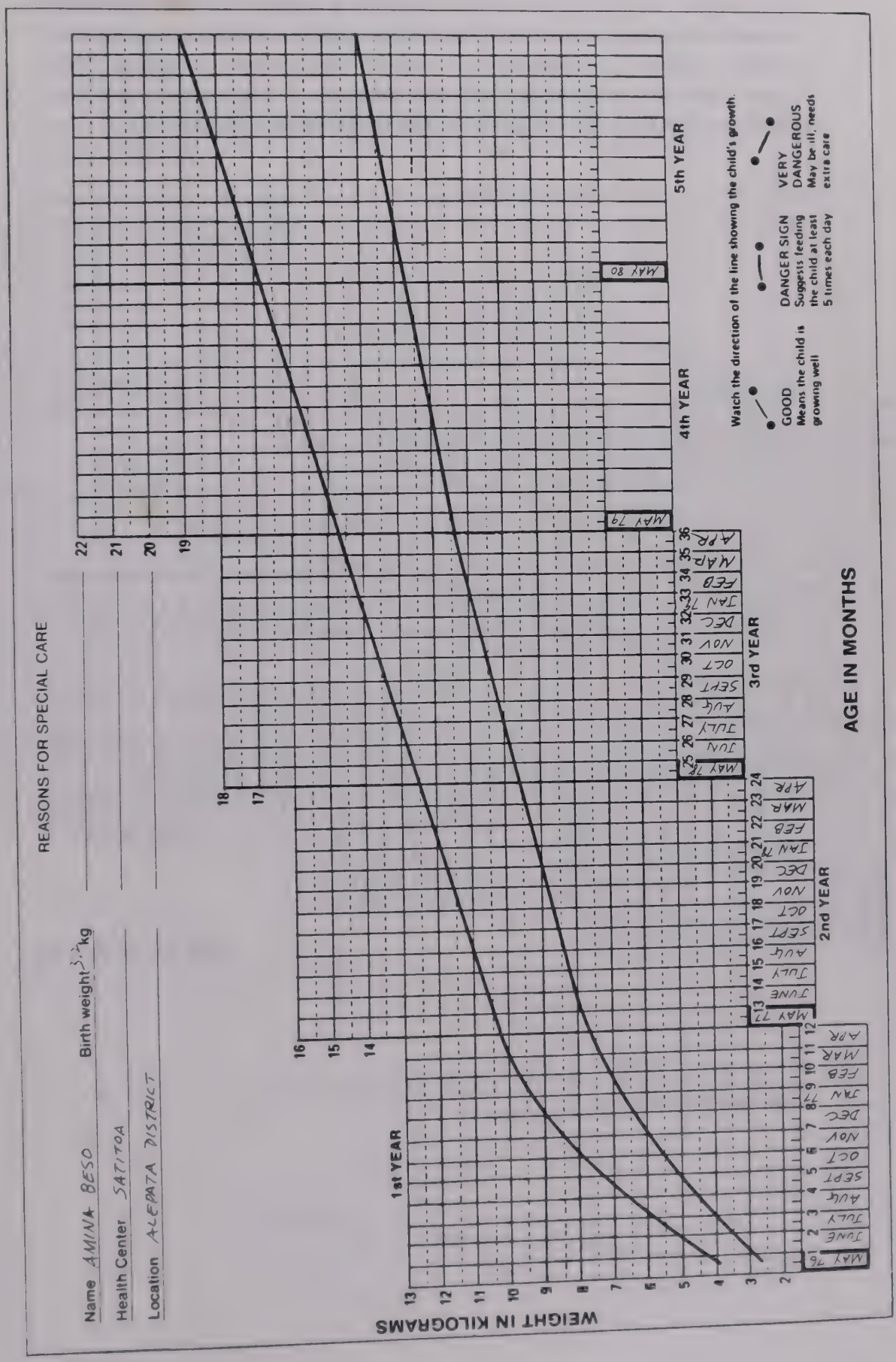
d. Explain to the mother that today you are going to weigh her child to find out if he is growing normally. Explain that if he is growing normally his weight will be inside the two dark lines on the growth chart.

e. Record the month and year of the child's birth in the first box at the bottom left corner of the growth chart. This box has a heavy line around it.

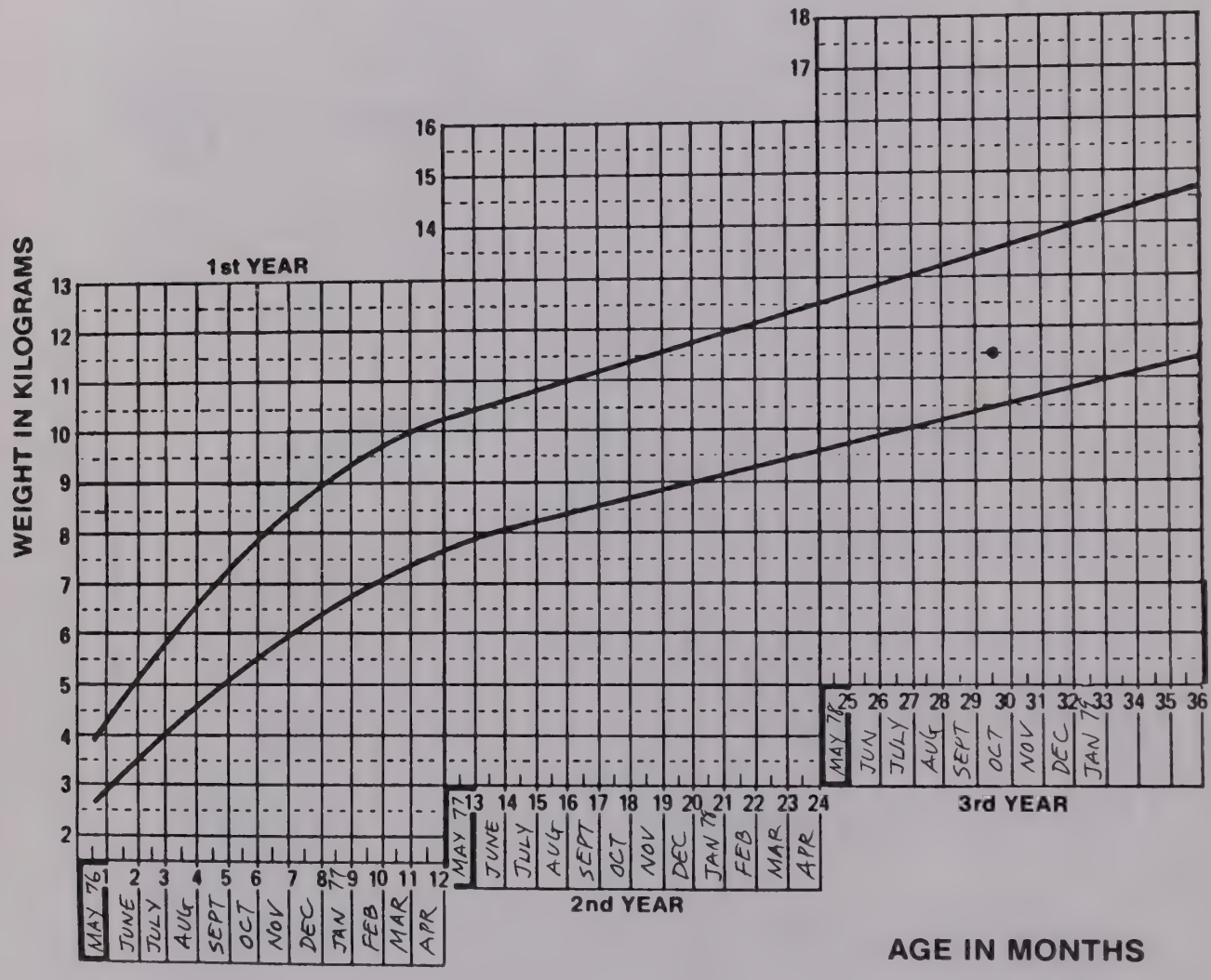
f. Write the name of the birth month in the first box for each year. In the sample chart, the child's birth date is 1 May 1976. Therefore, you would write May '76 in the first box, May '77 in the first box for the second year, and so on.

g. Fill in the months that follow the birth month in the blocks for each year.

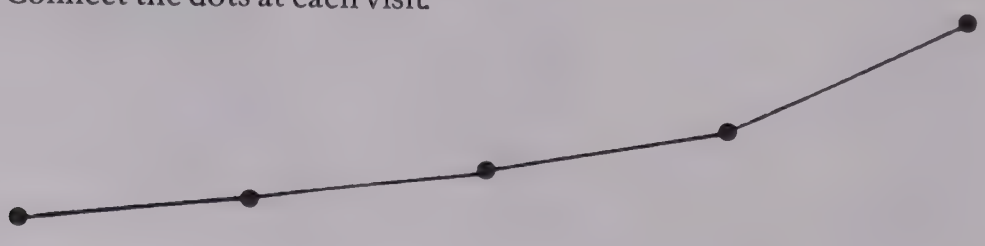
h. Weigh the child.


REASONS FOR SPECIAL CARE
Name AMINA BESO
Birth weight 3.2 kg
Health Center SARITOA
Location ALEPATA DISTRICT
WEIGHT IN KILOGRAMS
AGE IN MONTHS
1st YEAR
2nd YEAR
3rd YEAR
4th YEAR
5th YEAR
Watch the direction of the line showing the child's growth.
GOOD
Means the child is growing well
DANGER SIGN
Suggests feeding the child at least 5 times each day
VERY DANGEROUS
May be ill, needs extra care

i. Record his weight in the column directly above the box for that month. Make a dot over the place where the present month and the child's weight in kilograms intersect. For example, suppose the child was born on 1 May 1976, and today is 15 October 1978. The child weighs 11.5 kg. Place the dot as in the following example.



j. Record the child's weight on subsequent visits in the same way. Connect the dots at each visit.



Interpret the Chart

The two dark lines that rise at an angle across the growth chart indicate the normal growth pattern of children. If a child's weight falls within those two lines, he is normal in weight for age. The bottom line tells you the least amount of kilograms a child should weigh at any age during the first five years of life.

The direction of the line that connects the dots is as important as whether or not the child's weight is above or below the two dark lines. Watch the direction of the line. For example:

GOOD
This child is growing well.

DANGER SIGN
This child needs to be fed at least five times a day.

VERY DANGEROUS
This child may be ill. He needs extra care.

Any time a child's weight stays the same or continues to go down for four or five weeks, he needs help. He is malnourished. Find out why. Encourage the mother to feed the child extra food more often to help him grow.

Explain How to Take Care of the Chart

The Under-Five Card is a patient-held card. That is, the mother keeps the card at home. Tell the mother to bring the Under-Five Card whenever she takes her child to the health center or to the hospital for care.

2.3 USING THE ARM MEASUREMENT TECHNIQUE

Measuring a child's upper arm can help you determine if he is malnourished. This measurement is helpful only for children aged one to five. Follow these steps to use the arm measurement technique.

a. Be sure child's arm is straight and relaxed.

b. Choose a point halfway between his shoulder and his elbow. Measure around the child's upper arm with a tape measure.

c. Wrap the tape measure firmly around the child's arm but not tightly enough to wrinkle his skin.

d. Record the measurement.

e. Interpret the measurement.

A child whose upper arm measures less than 12.5 cm around is severely malnourished. Encourage the mother to feed the child extra food more often to help him grow.

A child whose upper arm measures between 12.5 and 14 cm around is moderately malnourished. Encourage the mother to feed the child extra food more often to help him grow.

A child whose upper arm measures more than 14 cm around is normal.

2.4 CHILD DEVELOPMENT GUIDE

As a child grows, he passes through basic stages of development. He normally acquires certain physical, language, and social skills at predictable times during the first five years of life. The following table describes some of these skills and the average age at which they usually develop. You can use this chart to assess a child's development.

AGE RANGE IN WHICH SKILLS SHOULD BE ATTAINED	SOCIAL SKILLS	PHYSICAL SKILLS	LANGUAGE SKILLS
Birth to first few minutes of life		Moves arms and legs	Cries
6 weeks to 2 months	Smiles in response to mother's smile	Can lift head when on belly	Listens to sounds
3 to 5 months	Smiles on own	Good head control Rolls over Plays with hands Grasps objects	Laughs and squeals Follows object with eyes
6 to 8 months	Feeds self biscuit Shy with strangers	Sits without support Stands with support	Makes babbling sounds Turns toward voice
8 to 11 months	Copies mother clapping hands	Crawls Pulls self to stand Has four to eight teeth	Imitates sounds Says one one-syllable word
12 to 14 months	Drinks from a cup	Stands alone Walks holding on Grasps small object with thumb and forefinger Bangs two objects together Has eight teeth	Says "mama" or "dada" to the correct person

AGE RANGE IN WHICH SKILLS SHOULD BE ATTAINED	SOCIAL SKILLS	PHYSICAL SKILLS	LANGUAGE SKILLS
18 to 20 months	Imitates mother doing housework	Walks alone Walks up stairs Walks backwards Has twelve to sixteen teeth	Says two to three words other than "mama" and "dada"
24 to 30 months	Uses spoon Washes and dries hands Removes clothing	Jumps in place Kicks and throws ball Has sixteen to twenty teeth	Follows simple directions Points to body parts named Can say about twenty-five words
3 to 3½ years	Dresses self with help Separates from mother easily	Climbs Stands on one foot Plays actively	Knows and can say name Talks well in sentences Asks many questions
4 to 4½ years	Buttons clothes	Hops on one foot	Can explain what he wants when he is cold, tired, or hungry Gives both names
5 to 5½ years	Dresses without help	Catches a bounced ball	Understands what "on," "under," "in," "over," and "behind" mean

2.5 SCHOOL HEALTH ACTIVITIES

Health activities in the schools in the community not only help improve the health of children but also help improve the health of the community as a whole. School health activities can reach children at an age when their health status and practices can be improved significantly. Children can also share what they learn in school with their families.

You and the other members of the health team can take part in many activities in the schools. Contact school teachers and administrators. Find out what activities they are already carrying out. Encourage what they are doing to promote good health. Explore new possibilities. Discuss your plans with them and work together to carry out these plans. Possible school health activities include:

- Screening school-aged children for common diseases, poor nutrition status, and vision and hearing problems
- Training school nurses to care for common infections and injuries
- Screening school workers for common health problems
- Developing health records that you can use to follow a child's health status throughout his school years
- Showing teachers ways to include health education in the school curriculum
- Training school workers to recognize and refer children with common health problems
- Making sure that the school has a clean water supply and clean latrines and that students understand the importance of these and use them
- Helping school workers organize the students to clean up the community
- Showing students and teachers how to grow and care for a simple school garden
- Promoting safety in sports, work, and the home
- Promoting good working relationships among teachers, parents, students, and health workers

Involving students in community health surveys

Providing ideas for educating school-aged children about:

- Good health habits
- Nutrition
- First aid
- Home and community sanitation
- Dangers of tobacco and alcohol
- Family life
- Simple home remedies for common health problems
- Food protection and storage
- Exercise

2.6 BASIC MESSAGES FOR THE CARE OF PREGNANT WOMEN

Share these health messages with pregnant women in the community and their families.

A pregnant woman must prepare for the birth of her baby. Good care begins before the baby is born.

A pregnant woman should eat extra body-building foods and foods that are rich in iron. A pregnant women needs plenty of food to nourish herself and the baby growing inside her.

A pregnant woman should visit a health worker at the health center regularly during her pregnancy.

The health center is a safe and clean place to have a baby.

A pregnant woman should take iron and folic acid tablets.

Pregnant women with problems should go to the health center right away. Pregnant women should go to the health center if they have:

- Bleeding
- Headaches
- Pain in the lower abdomen
- Pain during urination
- Fever
- Sudden weight loss
- Sudden weight gain
- Swelling of the hands or feet
- A very tired and weak feeling

Some women are at special risk during pregnancy. Pregnant women who are at special risk need extra care. They may have to deliver in the hospital. A pregnant woman may be at special risk if:

She is having her first baby
She is less than 152 cm tall
She has had four or more babies
She is under sixteen years old
She is over thirty years old and is having her first baby
She is over thirty-five years old
She may have twins or triplets
She has fits during her pregnancy
She has a long illness like diabetes or heart disease
She has blood, water, sores, or a bad smell in her birth canal
She had problems when giving birth to her other children such as an operation at the time of delivery, the baby died at the time of delivery, or a lot of bleeding at the time of delivery

2.7 PLANNING AN IMMUNIZATION PROGRAM

Immunizing children in the communities in your health center area is one of the many important community health activities that you will become involved in. Large numbers of children in your health center area may be only partially immunized. Many children may not be immunized at all. You may have to initiate a special effort to ensure that the children in your health center area receive the required immunizations. Use the questions below as a guide.

Why do you think an immunization program is needed? What are the immunization needs in the communities in your health center area?

Are any immunization services being provided in the communities at this time?

Have you discussed an immunization program with the district health team?

Which diseases do you want to prevent with an immunization program?

Are the vaccines needed for the program available?

What are the requirements for storing and protecting these vaccines?

How will you store the vaccines and transport them to where they are needed if the immunizations are given outside the health center?

Will you immunize children:

At the health center?
At different facilities in the area such as health posts or schools?
In homes?

Who is available to help with the program?

Are these people trained to assist in immunizing children?

If not, do they need to know:

When to give immunizations?
When not to give them?
How to give them?
How to keep track of the inventory of vaccines?
How to store and protect vaccines?
How to record immunizations?

How will they be supervised?

What kind of record keeping system will you use?

How will you communicate with the community to explain the program and the possible side effects of immunizations?

How will you follow-up on immunizations so that each child is fully immunized?

For more detailed information on planning an immunization program, contact your supervisor or the district health team.

2.8 IMMUNIZATION SCHEDULE

AGE	IMMUNIZATIONS
Newborn	BCG
3 months	DPT 1 Oral polio vaccine 1
5 months	DPT 2 Oral polio vaccine 2
7 months	DPT 3 Oral polio vaccine 3
9 months and after	Measles vaccine
18 months	DPT 4 Oral polio vaccine 4
When the child enters primary school(5-6 years)*	DT Oral polio vaccine

* Follow the national guidelines of your country regarding a second BCG vaccination for the child entering school

2.9 STORING AND PROTECTING VACCINES

The vaccines used for childhood immunizations are either live or dead. A live vaccine contains live organisms. However, these organisms are very weak and cause no harm. BCG, polio, and measles vaccines are live vaccines.

A dead vaccine contains dead organisms. The vaccine against whooping cough contains dead bacteria. Diphtheria and tetanus vaccines contain harmless substances that are made from parts of bacteria. The dead whooping cough bacteria and the diphtheria and tetanus substances are mixed together to make the DPT vaccine. Tetanus toxoid vaccine is sometimes given alone, especially to pregnant women toward the end of their pregnancy.

Warmth, bright light, or contact with antiseptic solutions can kill the organisms in live vaccines. Warmth can also spoil dead vaccines. Therefore, all vaccines must be kept cold.

The table outlines guidelines for storing and protecting vaccines. These guidelines are not a substitute for the package insert included with each vaccine.

VACCINE	TYPE OF VACCINE	GUIDELINES
BCG	Live	Keep the freeze-dried vaccine between 2° C and 10° C. Keep the vaccine away from sunlight. BCG vaccine will become useless in two weeks at 37° C or higher.
Measles	Live	Keep the vaccine frozen. Keep the ampules of diluent in the refrigerator. Measles vaccine will become useless in one hour at 37° C or higher.
Polio	Live	Keep the vaccine frozen. Do not take it out of the freezer until you need it. Take out one bottle at a time. Keep the bottle cool with ice. Polio vaccine will become useless in one day at 37° C or higher.
DPT, DT, tetanus toxoid	Dead	Keep DPT, DT, and tetanus toxoid vaccines between 2° C and 10° C. Protect them from freezing. Protect them from light. These vaccines will become useless in four days at 37° C or higher.

You and the other members of the health team must take special steps to protect vaccines when you are in the field with no refrigeration. Keep the vaccines in special cold boxes. Or, make a container for ice to keep the vaccines cold.

Vaccines that are stored and protected carefully will be effective for about two years. However, the life of a vaccine is cut short if it becomes warm for any reason. Each vaccine is marked with a date. This is the last day on which the vaccine will be effective. Do not use vaccines after this date.

2.10 RULES FOR IMMUNIZATION

Follow these rules for storing, protecting, and giving vaccines.

Make sure your refrigerator is working properly. Keep a thermometer in your refrigerator. Read it every morning and evening. Keep a record of the temperature. Always keep vaccines below 10° C. Heat destroys vaccines.

Keep polio and measles vaccines frozen. Store them in the freezer compartment.

Keep DPT, DT, and BCG vaccines, tetanus toxoid, and measles diluent in the refrigerator compartment. Do not let them freeze.

Do not store vaccines on the inside door of the refrigerator. If you do, they will warm up each time you open the refrigerator door.

Keep the refrigerator door closed.

Arrange the vaccine packages in the refrigerator with spaces between them so that cold air can move between the packages.

Keep several bottles of water in the refrigerator. They will help keep the vaccines cold if the refrigerator fails. Do not use these bottles for drinking.

Keep vaccines cold in a refrigerator or cold box until you need to use them.

Read the instructions that come with the vaccines. You may need to use vaccines from different makers in different ways.

Use the oldest vaccines first. Store new vaccines behind old vaccines. Do not use vaccines after their expiration date. Throw them away.

Do not save open ampules of live vaccine. Once you take a vaccine out of a refrigerator to use, do not put it back.

Never expose a live vaccine, especially measles or BCG vaccine, to strong sunlight. Sunlight can kill vaccines. If you are immunizing outside, shade the vaccines with a piece of paper or a large leaf.

Inject vaccines while they are still cold.

Use a different sterile needle for each child.

Use a different sterile syringe for each child.

Never give live vaccine with a syringe that has been sterilized in an antiseptic. Antiseptics kill live vaccines. Always sterilize your syringes for live vaccines by boiling them in a covered container for at least twenty minutes.

Do not add water for injection to vaccines. Water for injection sometimes contains antiseptics that kill live vaccines.

Do not immunize children for diseases they have already had. They are already protected.

Immunize malnourished children. They are in special danger. Their resistance to disease is low. See the Formulary for specific warnings about immunizing sick children.

SECTION 3

Nutrition

3.1 BASIC MESSAGES FOR COMMUNITY NUTRITION

Share these health messages with people in the communities where you work.

To stay healthy, a person needs to eat a balance of different nutritious foods every day. A person should eat body-building foods, energy foods, and protective foods at each meal.

Not eating enough of the right kinds of foods causes many common diseases.

Eating enough of the right kinds of foods helps the body resist disease. Eating enough of the right kinds of foods also helps a sick person get well again.

Body-building foods help the body grow and repair itself. Meat, fish, eggs, milk, beans, and nuts are examples of body-building foods.

Energy foods help the body move and work. Sugar, fats, oils, and rice are examples of energy foods.

Protective foods help the body fight infection. Most fruits, vegetables, and grains are protective foods. Protective foods contain important vitamins and minerals.

Family and community gardens are good sources of healthy foods.

Breast milk is the healthiest and least expensive food for a baby.

3.2 SIGNS OF NUTRITIONAL STATUS

You can learn a lot about a person's nutritional status by observing physical signs of health and disease. Use this chart as a guide. Learn about the signs of poor nutritional status. A person who is undernourished or malnourished may have one or more of these signs.

	GOOD NUTRITIONAL STATUS	POOR NUTRITIONAL STATUS
General appearance and state of health	Alert Responsive	Listless and tired Shows no interest in surroundings

	GOOD NUTRITIONAL STATUS	POOR NUTRITIONAL STATUS
	Not restless Sleeps well at night	Restless Sleepy during the day
Hair	Shiny and thick Healthy scalp	Stringy and dull-looking Dry and brittle Lacks color
Neck	No enlargement	Enlarged thyroid gland
Skin	Smooth, slightly moist Pink mucous membranes	Greasy Pale or discolored Dry, flaky, or rough Bruises or sores
Eyes	Bright, alert, and clean	Glassy Red or dry Thick conjunctivae
Lips	Moist and pink	Red and swollen Dry and flaky
Tongue	Pink Rough surface No sores	Red and swollen Smooth surface Red patches or sores
Gums	Pink and firm No swelling or bleeding	Red Swollen or bleeding
Teeth	Clean Not discolored Well shaped jaw	Decayed or worn Missing teeth
Abdomen	Flat	Swollen
Legs and feet	No tenderness No weakness or swelling Good color	Tender Weak or swollen Tingling
Skeleton	No deformities	Bowlegs Chest deformity
Weight	Normal for height, age, and build	Overweight Underweight
Posture	Able to stand straight Abdomen in and chest out Arms and legs straight	Sagging shoulders Sunken chest
Muscles	Firm Well developed	Poor tone Undeveloped or wasted Tender
Appetite and digestion	Good appetite Normal digestion No diarrhea No constipation	Lack of appetite Poor digestion Diarrhea Constipation

3.3 TAKING A FOOD HISTORY

Taking a food history means talking to individuals about their eating habits. Follow these steps when you take a food history.

a. Explain the purpose of a food history.

b. Obtain background information from the individual. Ask these questions:

"Have you had or do you now have any serious diseases?"

"Have you had or do you now have any nutrition problems?"

"How many people are in your family?"

"Do they all live with you?"

"What foods do you like the most? Why?"

"What foods do you like the least? Why?"

"How many meals do you usually eat each day?"

"What do you usually eat at these meals?"

"Do you drink alcohol or smoke cigarettes?"

c. Find out what the person ate in the last twenty-four hours. Ask these questions:

"What was the first thing you ate or drank when you woke up yesterday morning?"

"What did you eat after that?"

"How was this food prepared?"

"How much of this food did you eat?"

"What exactly was in this food?"

d. Continue questioning the person about his daily diet. Find out how much he ate during the day, how foods were prepared, and what foods any mixed dishes contained. Also ask about drinks. Use local utensils or measuring devices to help the person determine how much he ate. Find out if this is a normal day for him in terms of the food he ate.

e. Compare the information you obtained from the person with these standards:

A pregnant or breast-feeding woman needs three mixed meals each day. Each meal should include plenty of body-building foods and foods that are rich in iron. A pregnant or breast-feeding woman should eat one and one-half times her normal diet.

An infant needs only breast milk until age four to six months. Infants and children aged six months to three years need breast milk and four to six small mixed meals each day.

Children aged three years and older need four mixed meals each day.

An adult needs at least two mixed meals each day.

f. Discuss your findings with the individual. Make recommendations based on your findings. Be sure to explain the reasons for your recommendations.

3.4 GARDENING

Growing a small garden can supply a family with healthy foods. Gardening can also help a family save money. If you think that gardens can help people in your community stay healthy, ask the agricultural extension worker in the community for advice. He can tell you which method of gardening will work best in your area.

The method for growing a small kitchen garden is described below. Share this information with families in the communities in your health center area.

Planning the Garden

First, decide where to plant the garden. Locate the garden near the house so it can be easily cared for and protected. Locate the garden where the soil drains well and is deep and rich. A garden needs direct sunlight for at least four to six hours a day. Locate the garden away from large trees. Large trees can shade the garden too much. Also, the tree roots might take away needed nutrients and moisture.

Next, draw a plan of the garden on a large sheet of paper. Note north and south on the plan. Draw the permanent features of the garden area, such as trees, paths, and compost pits. Decide how big the garden should be. For example, a garden 9 meters long and 5 meters wide is large enough to provide one person with vegetables for twelve months of the year in a location that has a nine-month growing season.

Then, decide which crops to grow. Consider the time and space that each crop will require. Consider the nutritional value of different crops. Seek the local agricultural worker's advice. He will know which crops are best suited to your area. Note the crops on your plan.

Preparing the Soil

Preparing the soil is an important part of successful gardening. To ensure a healthy crop, you must carefully prepare, fertilize, and maintain the soil.

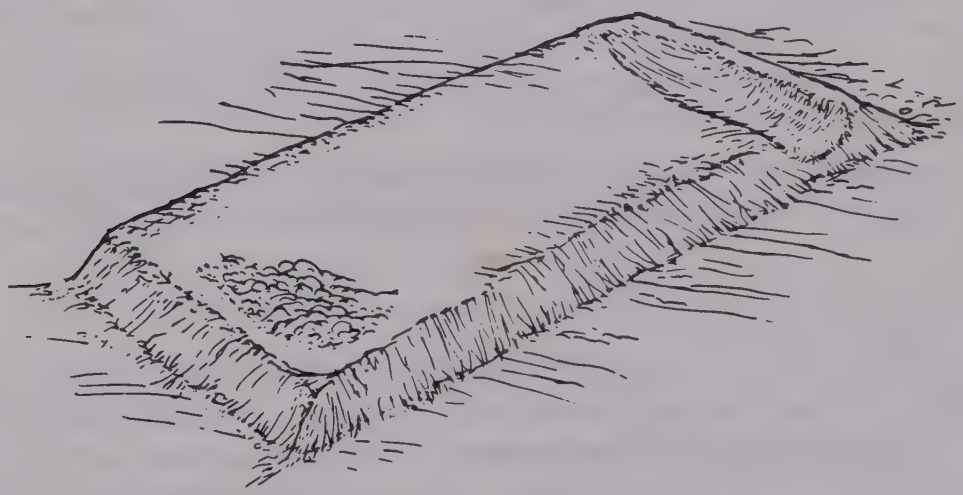
One of the best ways to prepare the soil is to use a raised bed. A raised bed is an area of the garden that is 10 to 15 cm higher than the original ground. A raised bed is usually 1 to 1.5 meters wide. The length is up to the gardener.

To make a raised bed:

a. Loosen the soil in the garden area to a depth of about 30 cm. Do not turn the soil over. Remove any weeds.

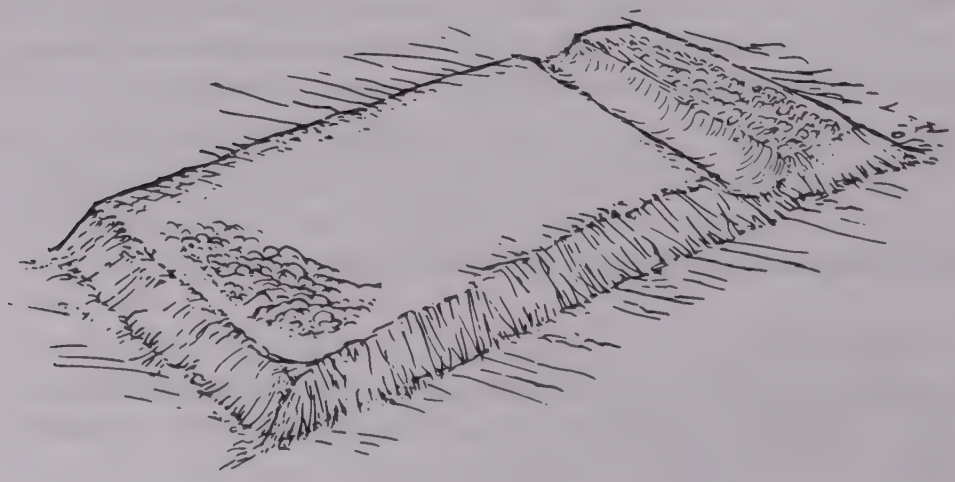
b. Add soil texturizers to the soil. Mix them in well. For example, if the soil is high in clay or sand content, add 1 to 2 cubic meters of compost or aged manure to every 9 square meters of soil.

c. Dig a trench 30 cm deep and 30 cm wide across the width of one end of the raised bed. Move the soil from this trench to the opposite end of the bed. You will use this soil later to fill the last trench that you dig.



d. Loosen the soil at the bottom of the trench to a depth of another 30 cm if possible. Do not remove this soil.

e. Dig another trench 30 cm deep next to the first one. Place the soil from this second trench into the first trench. Loosen the next 30 cm of soil in the second trench.



This process is called double digging. It involves moving the top 30 cm of soil into the previously made trench so that you are able to loosen the next 30 cm of soil.

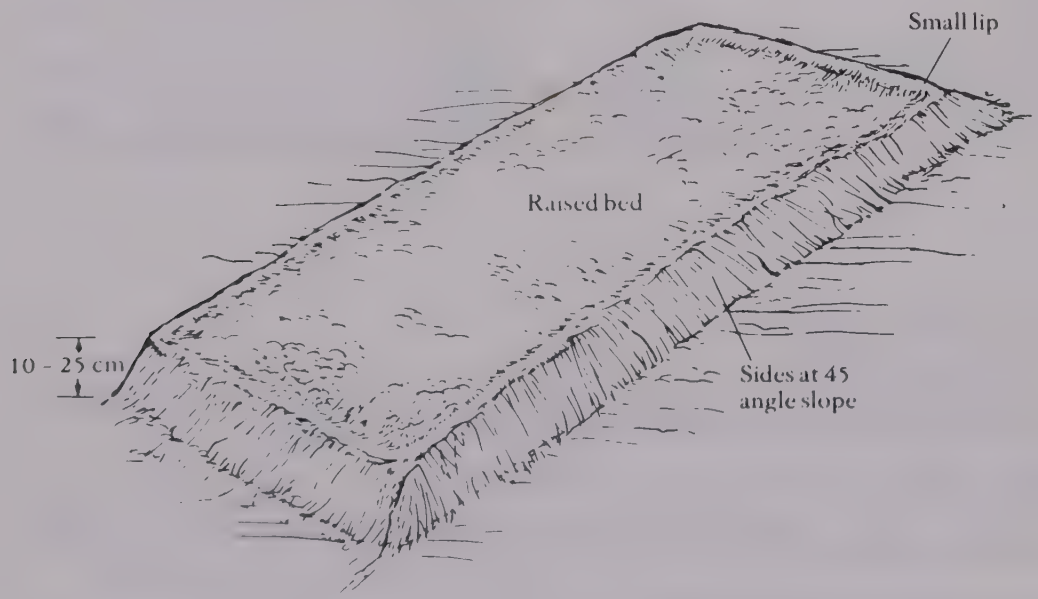
f. Repeat the process until you have double dug the entire bed. The bed should now consist of 60 cm of loose soil with the top 30 cm of soil with good texture.

g. Let the soil settle for one day.

h. Prepare the fertilizer. Combine sources of nitrogen, phosphorous, and potash. For example, to fertilize a bed that is 3 meters long and 3 meters wide, use 1 to 2 kg of filter press mud to supply the phosphorous, 1 to 2 kg of wood ash to supply the potash, and 2 to 4 kg of chicken manure or 10 to 22 kg of aged cow manure to supply the nitrogen.

i. Spread the fertilizer on the surface of the bed. Work it 5 to 7 cm into the soil.

j. Reshape the bed so it is 10 to 25 cm higher than the original surface and has a small lip on the outer edges. This prevents erosion and keeps the moisture in.



Planting Seeds

Care during planting will help ensure a healthy crop. Cover each seed with an amount of soil that is about twice the thickness of the seed. Then pat down the soil with your hand. Do not pack the soil too tightly. Seeds cannot sprout easily through tightly packed soil.

Wait until the small plants, or seedlings, have sprouted through the soil and have three or four leaves each. Then thin the seedlings and space

them so they have enough room to grow. Be sure to keep the hardy plants. The following table lists the spacings needed between seedlings of common vegetables.

RECOMMENDED SPACE BETWEEN PLANTS IN RAISED BEDS

CROP	SPACING	CROP	SPACING
Broad beans	20 cm	Garden egg	45 cm
Green bush beans	10 cm	Kale	15 cm
Lima pole beans	20 cm	Lettuce	30 cm
Lima bush beans	20 cm	Leaf lettuce	20 cm
Pole beans	15 cm	Mustard	15 cm
Beets	8 cm	Okra	30 cm
Broccoli	35 cm	Onions	8 cm
Cabbage	35 cm	Parsley	10 cm
Carrots	5 cm	Hot peppers	40 cm
Cauliflower	38 cm	Sweet peppers	30 cm
Celery	15 cm	Radishes	2-3 cm
Chard	20 cm	Spinach	5 cm
Chinese cabbage	10 cm	Tomatoes	60 cm
Cucumbers	30 cm	Turnips	8 cm

Growing Transplants

Growing transplants is another method of planting. You grow seedlings in a box or tray and then replant them in a raised bed.

Plant seeds in a flat box or tray that is at least 7 cm deep, 35 cm wide, and 60 cm long. A good soil mixture for growing transplants is one part sand to three parts top soil. Compost and manure are also helpful.

Wait until the seedlings sprout through the soil and have three or four leaves each. Then thin and space them. Leave four to six inches between the seedlings in the tray. Keep the soil around the seedlings moist. Never let the soil dry out completely.

Transplant the seedlings to the raised bed when they are strong, healthy, growing plants. First, water them well to keep the soil around the roots. Then, transplant one seedling at a time. Hold it by the soil around its roots. Make a hole in the garden bed large enough so that the seedling will not bend over when the roots are covered with soil that is pressed down firmly. Water the transplanted seedlings to pack down the soil around their roots.

Maintaining a Garden

Maintaining a garden involves watering and cultivating the plants. Use a watering can or a hose with a gentle spray to water plants in a raised bed. This method is most like the natural rainfall. It prevents damage to the plants and the soil.

Water a garden made up of seeds, seedlings, and young transplants about twice a day. Less watering is necessary as the plants grow and begin to cover the garden with their leaves.

Cultivating means loosening the soil and removing weeds. Loosening the top 5 to 7 cm of soil improves its ability to absorb water and air for the plants. Removing weeds ensures that the garden plants get needed nutrients. The best time to cultivate is one or two days after a good rain.

Maintaining a garden is not difficult if you do a little each day. Follow these guidelines:

a. Keep the garden clean. Remove weeds and old weed piles.

b. Keep plants thinned to desired spacings.

c. Keep the soil moist.

d. Pay attention to the health and fertility of the soil. Remember that healthy, well fed, strong plants are less likely to be attacked by disease and insects than are unhealthy plants.

SECTION 4

Environmental Health

4.1 BASIC MESSAGES FOR ENVIRONMENTAL HEALTH

Share these health messages with people in the communities where you work.

Always drink clean water. Dirty water spreads disease.

Protect your source of drinking water.

Clean water can get dirty during collection, storage, and use. Always collect and store water in a clean container. Always wash your hands before pouring, drinking, or using water.

Boil water for young children if the water is not clean.

Make a separate place for animals to drink.

Cover all food and water to keep away flies. Flies spread disease.

Build latrines or bury all human and animal wastes to keep your community clean. Human and animal wastes spread disease.

Build latrines at least 30 meters from any drinking water source.

Burn all trash that can be burned. Bury all trash that cannot be burned.

Make compost from garbage and animal wastes.

Use human wastes for agricultural or other uses only after they have been treated and buried for six months.

4.2 DIGGING AND PROTECTING A WELL

Wells that you dig by hand are usually shallower and more difficult to keep clean than are other types of wells. Still, a dug well with a water tight lining and a sealed top can provide clean water. Follow these steps to dig a well.

a. Contact a rural health inspector or sanitarian in the community for advice and help.

b. Gather these tools and materials:

Broad hoe
Shovel

Pail
Basket to remove soil
Hand tools, including crowbar, hammer, saw, chisel, trowel, tape measure, hack saw, pipe wrench
Rope
Pulley and frame or tripod
Pipe cutter
Dry, pre-cast concrete well rings
Cement, gravel, sand, wooden boards, nails, and reinforcing bars to build the slab
Hand pump

c. Decide where to dig the well. Look for signs of surface water, such as streams, springs, swamps, or lakes. These are often signs of water below the ground. Vegetation in an otherwise dry area is another sign of water in the ground. Or, notice if any sand and gravel deposits in river beds extend into the banks of the river. A shallow well dug nearby can often provide a good source of water.

   Locate the well away from latrines, septic tanks, animal pens, compost pits, and areas where pesticides or chemicals are used. Water in the ground near any of these is probably dirty. Dig the well at least 30 meters from latrines and other possible sources of contamination.

d. Dig the hole. Remove the soil with a basket and hoist. Make the hole at least 1 meter wide to allow enough room for one person to dig. If two people are digging, make the hole 1.3 meters wide.

e. Lower the concrete rings into the hole as the hole deepens. The rings will be the framework for the completed well. They prevent surface water from making the well dirty. They also help prevent the sides from collapsing while you are digging. The rings provide a solid lining that water cannot pass through. They also support the well top and pump. Extend the rings at least 90 cm above the ground.

f. Place gravel in the bottom of the well and around the outside of the bottom ring. Fill the remaining space between the wall and the ring framework with clean soil. Stamp down the soil.

g. Build a sloping drainage platform of concrete around the well. Make the platform 1 to 2 meters wide.

h. Cover the well with a water tight concrete slab and manhole with bolts for mounting a hand pump.

i. Install a hand pump on the well cover.

j. Build a drainage ditch that extends at least 32 meters from the well platform and that connects with a street drain, disposal tank, or irrigation system.

   You can also dig a drainage pit at the end of the ditch. A drainage pit is simply a hole dug in the ground and then filled with loose rock and

gravel. Use a drainage pit, however, only if the water table is more than 3 meters from the surface. Otherwise, the water supply can become dirty.

k. Disinfect the well with a chlorine solution.

4.3 MAKING A COMPOST PIT

Compost is a mixture of animal wastes, garbage, and plant materials. You can use compost to enrich the soil for gardening and farming. You can make compost in different ways. Most of these ways involve the same process of allowing the wastes, garbage, and plant materials to decay and form a rich mixture called humus. One method, a compost pit, is very useful for a small garden. Common materials such as kitchen scraps, rich garden soil, fresh vegetation, fresh cut weeds or grass, and animal wastes are arranged in a small pit dug in the ground. The pit protects the compost from the sun and wind. Follow these steps to make a compost pit.

a. Contact a rural sanitarian or health inspector in your area. He will be able to tell you the best method to use.

b. Gather these tools and materials:

   Shovel
   Pitchfork or metal rake
   Watering can, bucket, or hose

c. Decide where to make the pit. Locate the compost pit in a small area at least 10 meters from the house. It should be at least 5 meters and downhill from any water source.

d. Dig a hole 750 mm wide, 1.5 meters long, and about 1 meter deep.

e. Loosen the ground so there is about 100 mm of loose soil at the bottom of the pit.

f. Throw grass, weeds, leaves, or wastes from the kitchen on top of the loose soil. You can also throw animal wastes into the pit. When this material is about 250 mm deep, add another 100 mm layer of soil.

   Add the soil quickly after you place the plant materials and kitchen scraps in the pit. The soil contains organisms that speed up the decaying process. Also, the soil layer controls the smell and prevents flies from laying eggs in the compost.

g. Water the pit after you add each layer. Keep the compost pit moist, but do not soak it. A compost pit needs the proper mixture of air,

soil, nutrients, organisms, and water. Too little water or too much water will slow down the decaying process.

h. Make the layers loose. Do not pack them down. Movement of air in the pit speeds up the decaying process.

i. Turn the contents of the compost pit every two months in the summer and every three months in the winter. Turning the contents rearranges the materials in the pit and ensures that any disease-causing organisms are killed by the heat in the center of the pile.

j. Cover the pit with soil when it fills up. Mark the location of the compost pit.

You can use the contents of the compost pit for fertilizer after six months.

4.4 MAKING A RUBBISH OR TRASH PIT

Not all waste materials from around a home can be used in compost pits. Materials like glass, plastic, and metal do not decay easily. These materials can also be dangerous if they are left on the ground. They can cause accidents and also provide breeding areas for insects and rodents. The best way to dispose of trash and rubbish is to bury it or to burn it. You can bury rubbish in a rubbish pit. Follow these steps to make a rubbish or trash pit.

a. Locate the rubbish pit at least 10 meters and downhill from any water source.

b. Locate the rubbish pit at least 10 meters from any house.

c. Dig a hole 1 meter long, 1 meter wide, and about 1 meter deep. Slant the sides of the hole toward the center.

d. Throw rubbish or trash into the pit. Cover the rubbish every day with soil to keep flies and other insects from living in the rubbish.

e. Cover the pit with soil when it is full to about 200 mm from the top. Dig another rubbish pit.

4.5 PROTECTING A SPRING

Springs are sources of water from under the ground. Spring water flows from a layer of sand or gravel in the ground. It comes to the surface because rock or clay keeps it from seeping further into the ground. Springs are commonly found on the slopes of hills and in river valleys.

Spring water is usually clean. However, it can become dirty if it stands in an open pool or flows over the ground. Building a concrete, rock, or brick box around a spring will protect it from getting dirty. Follow these steps to build a spring box.

a. Contact a rural sanitarian or health inspector. He will be able to help you choose the best method of protecting springs in your area.

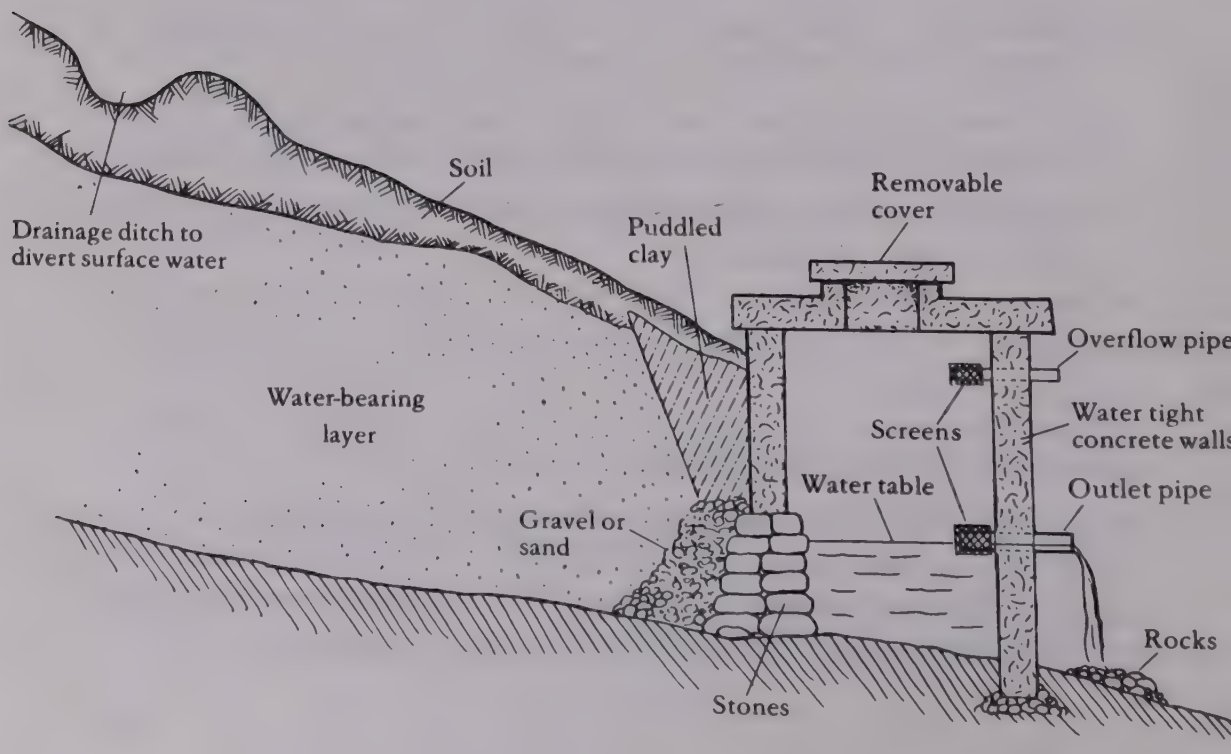
b. Gather these tools and materials:

Broad hoe and shovel
Wooden boards, hammer, saw, and nails
Cement, sand, gravel, and water or bricks, rocks, and mortar
Puddled clay
Reinforcing material
Screens
Stones
75 mm PVC or galvanized pipe
Wire mesh

c. Dig around the spring source until you reach the water-bearing layer. Find the eye of the spring. Avoid digging too far into the solid layer of rock or clay. If you do, the spring water may move or disappear.

d. Pile loose stones against the eye of the spring to form a foundation and prevent the soil from washing away.

e. Build a concrete, rock, or brick box around the spring if it is on flat ground. If the spring is on a hill, build the box in front of the spring so that the back of the box is against the loose stones. The walls of the box should be 10 cm thick. Reinforce the walls with 62 mm metal rods or wire mesh. The top should be at least 30 cm above ground level.



f. Line the back or bottom of the spring box with porous concrete or stone without mortar. Then spring water can pass into the box.

g. Make a removable cover so that you can clean the spring box. The cover should be heavy enough so that children cannot open it. The cover should extend 2 to 4 cm over the top edge of the box to prevent water, insects, or dirt from entering.

h. Place an outlet pipe at least 10 cm above the bottom of the spring box. Cover the end of the pipe with a screen to keep rats away.

i. Also place a screened overflow pipe slightly below the maximum water elevation in the spring box. Place rocks or concrete at the point where overflow water splashes onto the soil.

j. Fill the space behind or around the spring box with gravel or sand near the water-bearing layer. Place puddled clay above the gravel or sand. This prevents surface water from running down the wall into the box.

k. Dig a ditch at least 8 meters uphill from the spring box. Make it extend around each side of the box. The ditch protects the spring from dirty surface water. Pile the soil from the ditch on the downhill side to make a ridge.

l. Disinfect the spring box with a chlorine solution.

4.6 BUILDING A PIT LATRINE

Human wastes cause many diseases. Stool, in particular, spreads disease. For example, stool can get into drinking water sources and cause disease. Also, insects breed on stool and then walk on food and household items. Building and using latrines is the safest way to prevent the spread of disease from human wastes.

A pit latrine is a hand dug pit over which is placed a platform with a hole in it. A person can squat over this hole and allow his stool to fall into the pit. A cover keeps insects and water away from the stool. Most pit latrines also have a shelter which is built over the pit. Follow these steps to build a pit latrine.

a. Ask a rural sanitarian or health inspector to help you plan and build a pit latrine.

b. Gather these tools and materials:

Broad hoe
Shovel
Bucket or basket

Rope, pulley, and tripod
Cement, sand, and gravel for the slab
Trowels
Wood, nails, hammer, and saw for forms
Wood, bamboo, palm, or grass thatch for the shelter

c. Locate the latrine at least 6 meters from the nearest house and at least 30 meters and downhill from any drinking water source.

d. Dig a hole 1 meter long, 1 meter wide, and 3 meters deep. Make the hole smaller at the bottom than the top. The sides of the pit should slant in to prevent the pit from caving in.

e. Line the pit with wood, bamboo, or stones if the soil is sandy or unstable.

f. Use the soil you have dug out of the pit to build a mound around the pit. This will help prevent rain water from entering the pit. Pack the earth well. Extend the mound 50 cm beyond the base on all sides.

g. Make a floor for the latrine with wood, branches, cement, mud, poles, or other materials available in the community. A reinforced concrete slab or squatting plate makes the best floor. But be sure that any material you use to make the floor is very strong and firmly supported.

Leave a hole in the middle of the floor and above the pit. Seal the pit with mud, clay, or mortar so no light enters.

h. Make a cover for the hole of the latrine. Make a long handle for this cover.

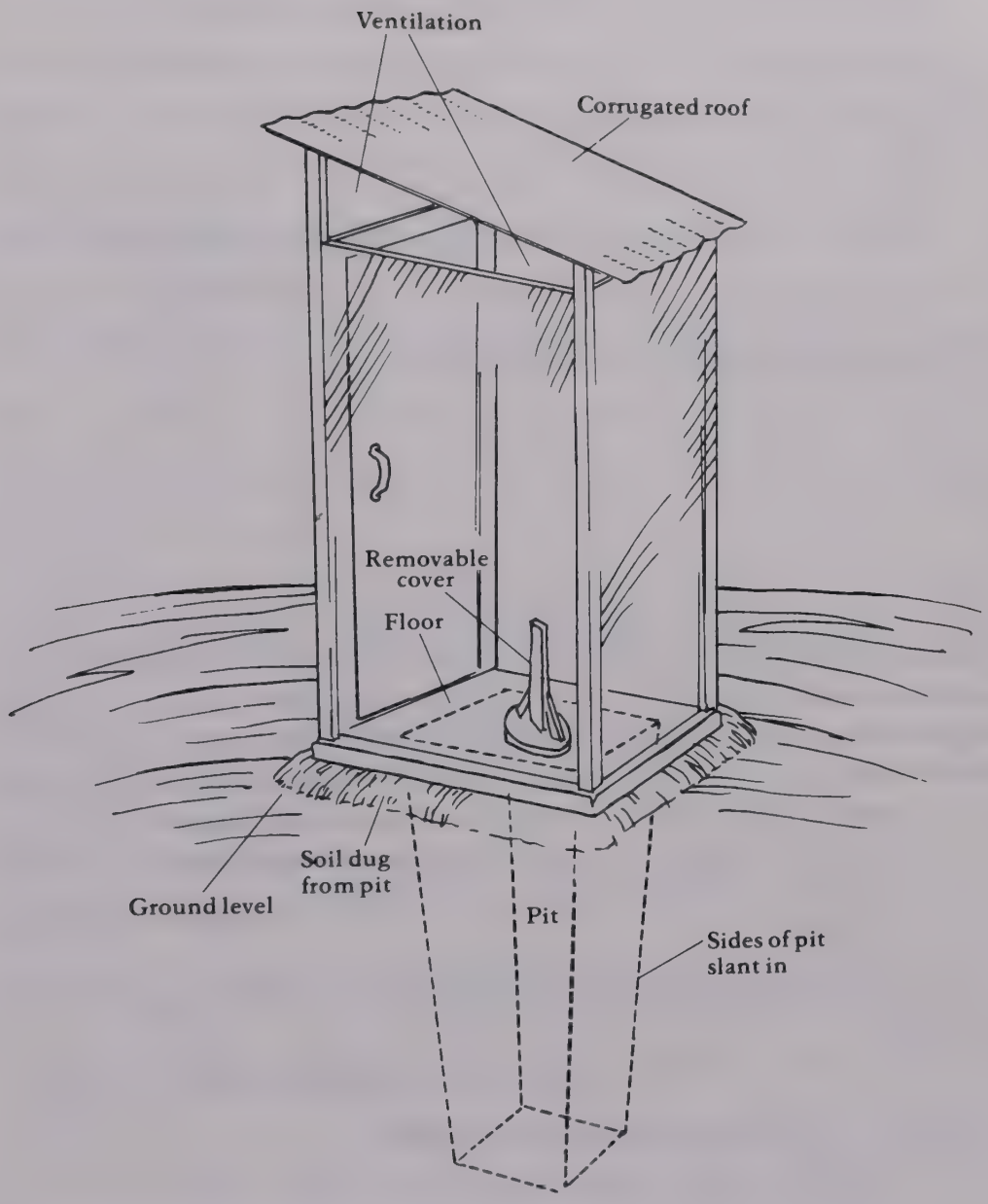
i. Build a frame for the latrine shelter with logs, bamboo, or wood. Make the entrance at least 2 meters high. The distance from the back of the hole to the back wall should be at least 15 cm.

j. Build a door frame.

k. Attach palm thatch, wood, or other material to the walls and door.

l. Leave a space about 10 to 15 cm wide between the walls and the roof for ventilation and light at the top of the shelter.

m. Use thatch or corrugated metal for the roof. Make the back wall shorter than the front wall so that the roof of the shelter slants down from the front to the back.



4.7 TAKING CARE OF A PIT LATRINE

For good health it is important to keep a latrine very clean. Flies will not live and breed in a clean latrine. A clean latrine also will not smell. Follow these steps to keep a latrine clean.

a. Keep the seat, walls, and floor of the latrine clean. Wash or brush them with soapy water and disinfectant. This will prevent flies from living and breeding in the latrine.

b. Cover the hole of the latrine when it is not being used. Remind people to do this.

c. Seal the pit carefully so there are no cracks. This will stop light from entering the pit. Without light, flies cannot breed in the pit.

d. Make sure that the latrine is not a nuisance to people living nearby.

e. Use the latrine until it is full to about one half meter from the top. Then remove the walls, floor, and seat if possible. Cover the top of the pit with soil. Mark the area. Dig another pit and build another latrine. The pit will take about five years to fill if used by one family.

f. Twelve months after you cover the pit, you can dig up the pit and use the soil as fertilizer. Use the fertilizer on the vegetable garden or spread it on the fields just before plowing.

4.8 CONTROLLING MOSQUITOES, FLIES, AND RODENTS

Insects such as flies, roaches, and mosquitoes and rodents such as rats can carry disease-causing organisms and spread disease in the community. Many insects and rodents live and breed in garbage and rubbish. Mosquitoes live and breed in and around pools of water and damp areas. To get rid of insects and rodents in the community, you must destroy the places where they live and breed. Follow these steps to control mosquitoes, flies, and rodents.

a. Keep all food in covered containers or in a screened cupboard or box.

b. Keep the kitchen and eating area free of garbage and food scraps.

c. Build and use latrines with covered holes.

d. Screen all doors and windows.

e. Control rats by blocking passageways through which they may enter storage areas. Keep food stored in strong containers. Use heavy screens in storage rooms. Use rat traps.

f. Control mosquitoes by draining pools or containers of standing water.

g. Use mosquito netting in sleeping areas.

h. Bury all trash and dead animals.

i. Use poisons and insecticides with care and only when necessary. Be sure to wash thoroughly after using them. Keep them away from children, food, and animals.

j. Kill flies in the house with a fly swatter.

4.9 CONTROLLING DISEASE OUTBREAKS IN THE COMMUNITY

There may be times during your work in the community when an unusual number of people all get a particular disease at the same time. This is a disease outbreak. Disease outbreaks of diarrhea, amebiasis, measles, and tuberculosis commonly occur. A dirty water source, dirty food, or insects can cause disease outbreaks. Or, a new disease can be introduced into an unprotected community.

Your training in community health work has prepared you to control disease outbreaks. You look at the problem closely and identify its causes. You decide whether you and the community can handle the problem or whether you need outside help. And, you eliminate the causes of the problem and treat those who are affected. Controlling a disease outbreak will not be difficult if you have been working in the community and are familiar with its strengths, weaknesses, and resources. Follow these steps to control a disease outbreak in a community.

Identify the Problem

Find out the symptoms and signs of the problem. If you do not recognize the disease, record as much information about its symptoms and signs as possible. Then you will be prepared to answer questions when you ask for advice and help.

Determine the extent of the problem. Find out if it is isolated in a particular part of the community or whether it is widespread. Use an area map to record areas where the problem has been reported.

Determine the Cause

Determine the cause or causes of the problem. Find out if people may have gotten the disease from the same source.

Remedy the Problem

Decide what is needed to remedy the problem. Can you and the community handle it yourselves? Will you need outside help? What resources are available? What else do you need?

Be sure to notify your supervisor of the problem. Be specific about what the problem is and how you plan to handle it. If the problem requires outside help, determine what you need to do to prepare for the arrival

of other personnel. Also find out what will be required of you when the outside help arrives.

Then remedy the problem. Follow-up to make sure that the cause of the problem has been eliminated and that the sick people are getting better.

4.10 ENVIRONMENTAL HEALTH CHECKLISTS

Environmental health checklists can help you observe a community's environment and identify possible causes of health problems. An environmental health checklist lists questions about different parts of the environment. Ask yourself these questions as you look at the communities in which you work. A community has a healthy environment if the answer to all of the questions is "yes." A "no" answer identifies an area in the environment that needs improvement.

Lakes and Ponds

Ask yourself these questions as you observe the community's environment and talk to people. Mark a "yes" or "no" for each question. Add any appropriate comments.

	YES	NO	COMMENTS
1. Does the drinking water from lakes or ponds look and smell clean?			
2. Are latrines at least 30 meters and downhill from the edge of the lake or pond?			
3. Are rubbish or trash pits at least 10 meters and downhill from the edge of the lake or pond?			
4. Are compost pits at least 5 meters and downhill from the edge of the lake or pond?			
5. Are people and animals living away from the water's edge?			
6. Are animals washed some place other than the lake or pond?			
7. Are crops near the water's edge free from insect sprays or other chemicals?			
8. Do community members always boil their drinking water from lakes and ponds?			

Rivers, Streams, or Canals

Ask yourself these questions as you observe the community's environment and talk to people. Mark a "yes" or "no" for each question. Add any appropriate comments.

	YES	NO	COMMENTS
1. Does the drinking water from rivers, streams, and canals look and smell clean?			
2. Are latrines at least 30 meters and downhill from the point in the river, stream, or canal where people take water?			
3. Are rubbish or trash pits at least 10 meters and downhill from the point where people take water?			
4. Are compost pits at least 5 meters and downhill from the point where people take water?			
5. Are people and animals living away or downstream from the area where people take water?			
6. Do people wash animals downstream from the area where water is taken?			
7. Are crops that are upstream from the area where people take water free from insect sprays or other chemicals?			
8. Do community members always boil their drinking water from rivers, streams, and canals?			

Springs

Ask yourself these questions as you observe the community's environment and talk to people. Mark a "yes" or "no" for each question. Add any appropriate comments.

	YES	NO	COMMENTS
1. Is there a ditch at least 8 meters uphill from the spring to catch dirty surface water?			
2. Is the spring box always covered to protect the water and the pipes?			
3. Are the pipes covered with screens to keep rats away from the spring?			
4. Do community members always boil their drinking water from springs?			

Dug Wells

Ask yourself these questions as you observe the community's environment and talk to people. Mark a "yes" or "no" for each question. Add any appropriate comments.

	YES	NO	COMMENTS
1. Are latrines located at least 30 meters and downhill from the well?			
2. Are compost pits located at least 5 meters and downhill from the well?			
3. Are animals kept away from the well?			
4. Is floating material kept off the surface of the water?			
5. Does the well have a water tight lining?			
6. Does the well have a sloping platform for drainage and walls 90 cm above the ground?			
7. Does a drainage ditch extend 32 meters from the well platform and connect with a street drain, disposal tank, or irrigation system?			
8. Does the well have a water tight cover and a working hand pump or generator pump?			
9. Does the pump fit well to the water tight cover?			
10. Is the pump without leaks or holes?			

Shallow Drilled Wells

Ask yourself these questions as you observe the community's environment and talk to people. Mark a "yes" or "no" for each question. Add any appropriate comments.

	YES	NO	COMMENTS
1. Are latrines located at least 30 meters and downhill from the well?			
2. Are rubbish and trash pits located at least 10 meters and downhill from the well?			
3. Is the well surrounded by a platform built with water tight material and sloping toward a drainage ditch?			
4. Does a drainage ditch extend 32 meters from the platform and connect with a street drain, disposal tank, or irrigation system?			
5. Does the well have a working pump that fits on a raised part of the platform?			
6. Is the pump without leaks or holes?			

Pit Latrines

Ask yourself these questions as you observe the community's environment and talk to people. Mark a "yes" or "no" for each question. Add any appropriate comments.

	YES	NO	COMMENTS
1. Are people using pit latrines?			
2. Is the latrine located at least 30 meters and downhill from any drinking water source?			
3. Is the human waste more than one-half meter below the latrine's floor slab?			
4. Does the latrine have a raised slab support with no holes or cracks for flies or rats to enter?			
5. Are the floor slab and pan clean?			
6. Is there a space between the walls and the roof for ventilation?			
7. Is soap and water available in the latrine for washing hands?			

Compost Pits for Fertilizer

Ask yourself these questions as you observe the community's environment and talk to people. Mark a "yes" or "no" for each question. Add any appropriate comments.

	YES	NO	COMMENTS
1. Are people using compost pits?			
2. Is the compost pit at least 5 meters and downhill from any drinking water source?			
3. Is the site downwind from the community and on low, level land?			
4. Are waste materials layered with dirt and soaked with water?			
5. Are people waiting six months after the pit is filled before using the material in the pit for fertilizer?			

Fly Control

Ask yourself these questions as you observe the community's environment and talk to people. Mark a "yes" or "no" for each question. Add any appropriate comments.

	YES	NO	COMMENTS
1. Are community members getting rid of fly breeding areas?			
2. Are community members using latrines and rubbish and trash pits?			
3. Do community members screen their food cupboards and containers to keep flies away?			
4. Are community members killing flies by swatting or with poisonous bait, insecticides, and fly paper?			
5. Are latrines and wash areas surrounded with concrete to keep flies away?			

Mosquito Control

Ask yourself these questions as you observe the community's environment and talk to people. Mark a "yes" or "no" for each question. Add any appropriate comments.

	YES	NO	COMMENTS
1. Are community members getting rid of mosquito breeding areas?			
2. Does a malaria control worker spray houses regularly?			
3. Do community members take anti-malaria tablets?			

SECTION 5

Community Health Survey Report

A community health survey gives you an idea of the most important areas to focus on for community health activities. A community health survey is an essential step in planning activities to meet community health needs. After you complete your community health survey, you must compile the information that you have gathered into a written report. Follow these guidelines to write a report of a community health survey.

Background Information

a. Record your name, the community you visited, and the dates of your visit.

b. Record information about the community. Include:

Population
Location and geographical setting
Seasonal changes
Type of agriculture in the area
Type of industry in the area
Current community development activities

c. Record the total number of homes you visited and the total number of children living in each home.

Environmental Health

a. Give information on sources of drinking water. Note whether or not the water sources are clean.

b. Note how community members dispose of garbage, trash, and human and animal wastes.

c. Give information on the insects and rodents that trouble the community.

Health of Mothers and Children

a. Calculate the percentage of children aged one to five who are undernourished as indicated by an arm measurement of less than 14 cm. Divide the number of children with an arm measurement of less than 14 cm by the number of children you measured. Multiply by 100.

b. Calculate the percentage of children aged one to five who have not been immunized. Divide the number of children who have not been immunized by the number of children you saw. Multiply by 100.

   Calculate the percentage of children who are only partially immunized. Divide the number of children with only some immunizations by the number of children you saw. Multiply by 100.

c. Note the number of pregnant women you saw.

d. Calculate the percentage of high risk pregnant women. Divide the number of pregnant women with high risk problems by the number of pregnant women you saw. Multiply by 100.

e. Answer these questions. Make comments as necessary.

   What are some of the common diseases that affect children?

   How do parents treat these common diseases?

   What high risk problems do the children have?

   What high risk problems do the pregnant women have?

   How often do women have complications of pregnancy, labor, or delivery?

   What are the attitudes of community members toward child spacing?

Nutrition

a. Note the foods available in the community. Note the foods that families eat most often.

b. Note the foods that pregnant women eat.

c. Describe what newborns and infants from birth to age one eat.

d. Describe what children aged one to five eat.

e. Calculate the percentage of newborns, infants, and children who are breast-fed. Divide the number of newborns, infants, and children from birth to age three who are breast-fed by the total number of newborns, infants, and children under age three that you saw. Multiply by 100.

f. Answer these questions. Make comments as necessary.

   What are the attitudes of community members toward breast-feeding?

   What do most families spend on food each week?

   What are some of the common diseases related to nutrition problems?

Common Diseases and Health Care

a. Answer these questions. Make comments as necessary.

What are some of the common diseases that affect people in the community? What do you think the causes are?

How far is the health center from the community?

Do people use the health center or traditional practitioners more often?

Is there a need for home and community visits by health workers?

b. Give your opinion about whether this community is healthy or unhealthy, and why.

c. What do you see as some of the most important health needs of the community?

d. What do you see as important resources in the community that could be used to carry out community health activities?

e. Comment on:

Opinions of community leaders about health needs
Opinions of school workers about health needs
Opinions of other official health workers about health needs
Opinions of development workers about health needs
Willingness of the community to work toward meeting health needs

f. Describe what you have learned from this community experience.

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